

Applicant: STAHLE, Martin
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REMARKS

Applicant respectfully requests reconsideration of the above-identified application in view of the following remarks.

Status of Claims

Claims 2, 3, and 6-14 were previously pending in this application. Claim 3 has been cancelled without prejudice to filing in a continuation or divisional application. Accordingly, claims 2 and 6-14 are currently pending in this application. Claims 2, 9, 11, and 12 have been amended. It is respectfully submitted that no new matter has been added.

Claim Objection

In the Office Action, the Examiner objected to claim 12 because of informalities. In accordance with the Examiner's observations, claim 12 has been amended. Accordingly, Applicant respectfully requests that the Examiner withdraw the objection to claim 12.

Claim Rejections

35 U.S.C. § 112 Rejections

In the Office Action, the Examiner rejected claims 2 and 6 under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claim 2 has been amended for clarity to recite, "the guide vane is fixably mounted and the fixed position of the guide vane is adjustable". Support for these amendments is found, for example, in paragraphs [0024] and [0025] of the Published Application.

The Examiner rejected claim 6 for having insufficient antecedent basis for the limitation "guide vane edge section". Claim 6 depends indirectly from claim 12, which has been amended to recite, "a guide vane edge section", thereby providing the requisite antecedent basis.

Accordingly, Applicant respectfully requests that the Examiner withdraw the rejections of claims 2 and 6 under 35 U.S.C. § 112.

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35 U.S.C. § 102 Rejections

The Examiner rejected claims 9 and 10 under 35 U.S.C. § 102(b) as being anticipated by Podesser (EP 0233859 A1) and claims 3 and 8-14 under 35 U.S.C. § 102(b) as being anticipated by Schlesinger (US Patent No. 3,340,812). Applicant respectfully traverses the rejections under 35 U.S.C. § 102(b) in view of the remarks that follow.

Each of claims 9 and 11 includes, *inter alia*, a “guide vane edge... increasingly projects ... into an interior space of the impeller.”

Applicant respectfully asserts that Podesser does not teach at least these features. The Examiner equates the element 21 of Podesser with Applicant’s guide vane and element 23 of Podesser with Applicant’s blade entry edge of the rotating impeller. Accordingly, Applicant assumes that the Examiner equates the element 24 of Podesser with Applicant’s impeller. However, element 21 of Podesser does not increasingly project into an interior space of element 24. In fact, Fig. 1 shows element 21 of Podesser to be positioned exclusively outside of the exterior surface of the element 24.

Each of claims 9 and 11 includes, *inter alia*, “a screw-centrifugal pump”. Applicant respectfully asserts that Schlesinger does not teach at least this feature. A screw has a known general shape, generally a shaft with a helical groove. See, e.g., <http://en.wikipedia.org/wiki/Screw>. The Examiner equates the vanes 3 and 4 of Schlesinger with Applicant’s impeller and the collar 11 of Schlesinger with Applicant’s guide vane. None of the collar 11 of Schlesinger, the vanes 3 and 4 of Schlesinger, or any other relevant component of the pump of Schlesinger is formed as a screw. It is shown in one embodiment of the invention, for example, in Fig. 1 of the present Application, that Applicant’s impeller 2 has a screw shape that allows material to slowly change direction (at a 90° angle) in the flow direction S, whereas the centrifugal pump of Schlesinger forces material to abruptly change direction at a 90° angle.

In addition, claim 9 includes, *inter alia*, “a spirally extending blade entry edge of the impeller” and claim 11 includes, *inter alia*, “an impeller comprising a spirally extending blade entry edge”. Applicant respectfully asserts that Schlesinger does not teach at least these features. The Examiner asserts that the vanes 3 and 4 of Schlesinger

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comprise a spirally extending blade entry edge. Applicant assumes the Examiner equates the curved forms of vanes 3 and 4 of Schlesinger shown in Fig. 2 with Applicant's claimed spirally extending blade entry edge. Applicant disagrees. Applicant asserts that the curved form of vanes 3 and 4 of Schlesinger shown in Fig. 2 are not blade entry edges. The curved form of vanes 3 and 4 lie along the upper surface of the vanes 3 and 4 that glide to fit with the lower surface of a plate 2a, as shown in Fig. 1. No blade exists on these or on any other surface of the vanes 3 and 4 of Schlesinger and no material is cut by the vanes 3 and 4. The vanes 3 and 4 are paddles of a paddle wheel 2 of Schlesinger which move and do not cut material. In column 2, lines 38-40, Schlesinger teaches, "any shreds of the solid matter which may cling to the outer edges of the guide vanes 3, 4 are removed at a cutting edge 17". Schlesinger teaches only two cutting structures: a cutting edge 12 and a cutting edge 17. Both the cutting edge 12 and the cutting edge 17 are separate structures from the vanes 3 and 4. Therefore, the vanes 3 and 4 of Schlesinger do not have a spirally extending blade entry edge.

In addition, claim 9 includes, *inter alia*, "the liquid is directed in such a way that at least some of the solid additions slide along a spirally extending blade entry edge of the impeller". Applicant respectfully asserts that Schlesinger does not teach this feature. Fig. 1 of Schlesinger shows that the vanes 3 and 4 of Schlesinger, which the Examiner equates with Applicant's impeller, end at a plate 2a. The plate 2a seals the housing 1 containing the vanes 3 and 4 from above, thereby preventing solid additions entering the inlet 8 from moving vertically upward, i.e., in the direction of the edges of the vanes 3 and 4. Instead, as shown in Fig. 2, the material is moved radially relative to the edges of the vanes 3 and 4, through the outlet 10.

Furthermore, claim 9 includes, *inter alia*, "the solid additions are moved mechanically in flow direction of the fluid by the impact of the blade entry edge". Applicant respectfully asserts that Podesser does not teach this feature. In fact, because of the shape of element 24 of Podesser, when solid material impacts the element 24, the solid material is to deflect away from the direction of the flow of liquid. In particular, the solid material is to deflect in a direction opposite to the flow of liquid.

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Each of claims 8, 10 and 12-14 depends, directly or indirectly, from one of independent claims 9 and 11, and includes all the limitations thereof. Therefore, claims 8, 10 and 12-14 are likewise allowable over each of Podesser and Schlesinger.

Claim 3 is cancelled hereinabove. The rejection of Claim 3 is therefore moot.

Applicant respectfully asserts that each of Podesser and Schlesinger are directed to pumps that work on different principles, and therefore these two references cannot be combined to teach any of Applicant's claims.

The rejection of claims 3 and 8-14 under 35 U.S.C. § 102(b) is therefore requested to be withdrawn.

35 U.S.C. § 103 Rejection

The Examiner rejected claims 6 and 7 under 35 U.S.C. § 103(a) as being unpatentable over Schlesinger. Applicant respectfully traverses the rejections of claims 6 and 7 under 35 U.S.C. § 103(a) in view of the remarks that follow.

Each of claims 6 and 7 depend, directly or indirectly, from independent claim 11, which as discussed is allowable over Schlesinger. Therefore, claims 6 and 7 are likewise allowable over Schlesinger. The rejection of claims 6 and 7 under 35 U.S.C. § 103(a) is therefore requested to be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant submits that the pending claims distinguish over the prior art of record and are in condition for allowance. Favorable consideration and passage to issue are therefore respectfully requested.

The Examiner is invited to telephone the undersigned counsel to discuss any further issues yet to be resolved in connection with this application.

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No fees are believed to be due in connection with this paper. If any such fees are due, please charge such fees to deposit account No. 50-3355.

Respectfully submitted,



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